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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,301

06/30/2005

Emma V Wright

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7590

05/14/2009

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EXAMINER

TENTONI, LEO B

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

05/14/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/541,301	<b>Applicant(s)</b> WRIGHT ET AL.	
	<b>Examiner</b> Leo B. Tentoni	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20 and 22-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 November 2008 has been entered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 20 and 22-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 20, lines 6-7, the expression "a complete stack" does not have clear and proper antecedent basis in the claim (i.e., there is no previous mention of any type of stack, complete or incomplete) and this expression renders the claims indefinite principally because it is not clear what applicant intends to cover by such a recitation (i.e., it is not clear exactly what constitutes a complete stack). For purposes of

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examination, the Examiner interprets "a complete stack" to be a complete (or completed) product.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 20, 22, 23, 25 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (U.S. Patent 6,294,401 B1) in combination with Zheng (U.S. Patent Application Publication 2003/0235738 A1).

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Jacobson et al (see the entire document, in particular, col. 3, line 37 to col. 6, line 43) teaches a solid structure fabrication process as claimed (to manufacture electrical, electromechanical or mechanical devices), including ejecting nanosized particles on a layer-by-layer basis and firing (or sintering) a complete stack (or product) in a single operation (note col. 6, lines 22-24 of Jacobson et al). Jacobson et al does not explicitly teach manufacturing solid oxide fuel cell (or SOFC) structures. Zheng (see the entire document, in particular, the abstract; paragraphs [0004] and [0073] - [0079]; paragraph [0077] teaches an embodiment of firing (or sintering) a complete product in a single operation) teaches a solid structure fabrication process including manufacturing SOFC structures (having an anode, a cathode and an electrolyte) and it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the disclosures of Jacobson et al and Zheng principally in order to manufacture and electrical device such as SOFC structures.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (U.S. Patent 6,294,401 B1) in combination with Zheng (U.S. Patent Application Publication 2003/0235738 A1) as applied to claims 20, 22, 23, 25 and 27-29 above, and further in view of Gothait (U.S. Patent 6,658,314 B1).

Gothait (see the entire document, in particular, col. 5, lines 40-54) teaches a solid structure fabrication process including the use of a release layer (or film), and such would

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have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Jacobson et al in view of Gothait principally in order to provide for better release of the final product from the building platform.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (U.S. Patent 6,294,401 B1) in combination with Zheng (U.S. Patent Application Publication 2003/0235738 A1) as applied to claims 20, 22, 23, 25 and 27-29 above, and further in view of Levy (U.S. Patent 6,863,859 B2).

Levy (see the entire document, in particular, the abstract; col. 4, lines 2-18; col. 5, lines 3-23) teaches a solid structure fabrication process including the use of a fugitive material, and such would have been obvious to one of ordinary skill in the art at the time the invention was made in the process of Jacobson et al in view of Levy principally in order to provide support material (during the building process) which can be readily removed.

#### ***Response to Arguments***

9. Applicant's arguments filed on 24 November 2008 have been fully considered but they are not persuasive.

10. Applicant argues (page 5) that Jacobson et al and Zheng both require firing (or sintering) after the application of each layer. Examiner responds that Jacobson et al (see col. 6, lines 22-24 of Jacobson et al) and Zheng (see paragraph [0077] of Zheng) are not limited to this particular embodiment, and both

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references include an embodiment in which the firing (or sintering) occurs on a complete product.

11. Applicant argues (page 6) that there is no teaching or suggestion in either Jacobson et al or Zheng that the methods for printing involved would be applicable to create anodes, cathodes or electrolytes. Examiner responds that Zheng teaches manufacture of SOFC structures (which include an anode, a cathode and an electrolyte) by rapid prototyping, including printing (see paragraph [0074] of Zheng).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leo B. Tentoni whose telephone number is (571) 272-1209. The examiner can normally be reached on Monday - Friday (6:30 A.M. - 3:00 P.M.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leo B. Tentoni/  
Primary Examiner, Art Unit 1791